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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,801	11/20/2001	Anthony Bonnet	ATOCM-238	8848

23599 7590 08/29/2003

MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
2200 CLARENDON BLVD.
SUITE 1400
ARLINGTON, VA 22201

EXAMINER

VIJAYAKUMAR, KALLAMBELLA M

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 08/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,801

Applicant(s)

BONNET ET AL.

Examiner

Kallambella Vijayakumar

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Election in paper-8, dated 07/18/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: _____

Detailed Action

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. Claims 1-16 are currently pending with the application.

Applicant's election with traverse of Group-I, Claims 1-10 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the applicant reserves the right to file the non-elected claims as divisional application/s. The requirement is still deemed proper and is therefore made FINAL.

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892 or IDS has been submitted by the applicant on Form PTO-1449, they have not been considered.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

Claim Rejections - 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 5-6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bevers (US 5,738,905) in view of Braun et al (US 4,554,063).

Bever's discloses catalyst micro-composite for an electrode comprising of about 50% by weight of Pt/Carbon with a particle size of 0.03-1 micron, 20% PTFE with a size between 0.1-1 micron, and 25% by weight of Nafion with a particle size of 0.5-2.0 micron. The particle sizes of the components are within the limitations of the instant claims by the applicants. Bever's also discloses the use of Porogen in the fabrication of the composite. The ratio of the fluoropolymer to the conductive particle is nearly close to that of the claim limitation by the applicants in claim-5. (Col-4, Lines: 14-26; Col-5, Lines: 14-38).

Bever's does not disclose the amount of the porogen used in the composition or the use of carbon fibers.

Braun teaches use of carbon fibers and graphite in the cathodes for the bipolar membrane electrolysis cells (Abstract)

It would have been obvious for a skilled person in the art to modify the composite composition of Bever's by the choice of design, benefit by incorporating carbon fibers in the composition per the teachings of Braun, because both the art by Braun and Bever's are in the analogous art of carbon composites and, to obviously arrive at the claim limitations of the instant claims by the applicants, with reasonable expectation of success.

Claims 1-4 are rejected under 35 U.S.C. 102(e) as anticipated by Kelly et al (US 6,298,209).

Kelly teaches making of a composite powder by coating 5-micron sized particles of envirocron, a composite of polyurethane and carbon, with Kynar (ultra-fine sol of PVDF) (Col-10, Lines: 6-16, Col-11, Lines:9-18). The presence of 50-90% VF2 would be inherent in the copolymer of vinyl fluoride and hexafluoropropylene as shown by Polek (EP 456018, Abstract). All the limitations of the instant claims are met.

The reference is anticipatory.

In the alternative that the disclosure by Kelly would be insufficient to arrive at the instant claims, it would have been obvious for a skilled person to make modification to the composition of Kelly by the choice of design, and to obviously arrive at the instant claim limitations with reasonable expectation of success.

Claims 1-4, 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelly et al (US 6,298,209) in view of Nishimura et al (US 6,103,373) or Chu (US 5,789,108).

The disclosure by Kelly on the composition of the composite is set forth as above.

Kelly does not disclose the use of carbon fibers or the PEG in the composite formulation.

Chu teaches the use of PEG as a dispersant for micron sized carbon and as PEG is soluble in water, the use of a solvent wherein PVDF would be insoluble would be obvious (Col-12, Lines: 55-60).

Nishimura et al disclose the use of carbon fibers in forming the composites with fluoropolymers such as PTFE for forming the electrodes.

It would have been obvious for a person of ordinary skill in the art to make changes to the composite powder composition of Kelly by choice of design, benefit by incorporating PEG and/or carbon fibers per the teachings of Chu or Nishimura, because all the disclosures are in the

analogous art of carbon composites, and to obviously arrive at the limitations of the instant claims by the applicants with reasonable expectation of success.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Suzuki et al (US 6,051,343) teaches the use of VF2/HFP copolymer, PVDF (KYNAR) and meso carbon/graphite in the Secondary cells. Calver et al (US 6,511,767) teaches the use of PVDF (KYNAR) and graphite in the electrodes. Shimizu et al (US 5,494,752) discloses the composite of micro-particles of fluoropolymers. Singer (US 4,177,159) teaches composite of colloidal PTFE with carbon. Wu (US 6,156,839) is suggestive of ultra-fine PTFE composites. Dusen et al (US 5,496,675) disclose the composite containing KYNAR and polymer-carbon composite.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kallambella Vijayakumar whose telephone number is 703-305-4931. The examiner can normally be reached on M-Th, 07:00 - 15.30 hrs, Fri: 05.30-14.00.

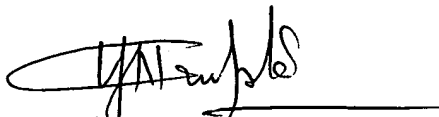
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 703-308-4708. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Art Unit: 1751

Kmv

August 24, 2003



YOGENDRA N. GUPTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700